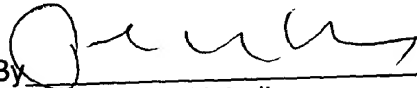


REMARKS

The claims are being amended to improve form.

Respectfully submitted,

PILLSBURY WINTHROP LLP

By 
Paul N. Kokulis
Reg. No. 16773

PNK:mh
1600 Tysons Boulevard
McLean, Virginia 22102
Phone: (703) 905-2118

09700259-103001

APPENDIX

Version with Markings to Show Changes Made

IN THE CLAIMS

Claims 51, 52 and 53 are being canceled.

The claims are amended as follows:

3. (Amended) Vector material as claimed in Claim 2 wherein the tumour-sensitizing expression product is a prodrug activating enzyme selected from the following group consisting of:

HSV thymidine kinase, nitroreductase, cytosine deaminase, cytochrome p450 2E1 [or] and cytochrome p450 2DV1.

5. (Amended) Vector material as claimed in [any one of the preceding claims] Claim 1 wherein the control gene encodes a recombinase enzyme that acts on recombinase target sites to modify the vector material to establish said operative linkage between the sensitizing gene expression regulatory system and the sensitizing gene or genes.

7. (Amended) Vector material as claimed in Claim 5 [or 6] wherein said recombinase target sites are separated by a region containing a "stop" sequence of nucleotides that blocks or otherwise prevents expression of the sensitizing gene or genes until removed by the action of said recombinase enzyme.

8. (Amended) Vector material as claimed in Claim 5 [or 6] wherein the protein coding regions of the sensitizing gene or genes are operationally separated from the said promoters and wherein said recombinase target sites are arranged such that recombination brings about the juxtapositioning of the sensitizing gene promoters and protein coding regions of the sensitizing gene or genes resulting in their expression.

9. (Amended) Vector material as claimed in [any one of Claims] Claim 5 [to 8] wherein the control gene is a fusion gene that when expressed produces a fusion protein consisting of a recombinase and an intercellular trafficking protein [(such as for example the virion protein VP22)].

10. (Amended) Vector material as claimed in [any one of Claims] Claim 5 [to 9] wherein the region between said recombinase target sites contains a duplicate copy of the recombinase control gene together with an associated promoter.

11. (Amended) Vector material as claimed in [any one of the preceding claims] Claim 1 wherein the sensitizing gene expression regulatory system incorporates at least one expression inducible element responsive to the effect of a predetermined exogenous or endogenous expression inducing influence.

12. (Amended) Vector material as claimed in [any one of the preceding claims] Claim 1 wherein the sensitizing gene is a fusion gene that when expressed

produces a fusion protein consisting of a sensitizing protein and an intercellular trafficking protein.

13. (Amended) Vector material as claimed in [any one of Claims] Claim 1 [to 8] wherein the or each tumour sensitizing gene is selected from the group consisting of the *E. coli* nitroreductase gene, cytosine deaminase (CD) gene, *Herpes simplex* virus thymidine kinase (HSV-*tk*), mammalian cytochrome p450 2E1 or 2DV1 gene, and their functional equivalents.

14. (Amended) Vector material as claimed in [any one of the preceding claims] Claim 1 wherein the tumour cell sensitizing gene or genes and the control gene are in separate vectors.

15. (Amended) Vector material as claimed in [any one of Claims] Claim 1 [to 13] wherein the tumour cell sensitizing gene or genes and the control gene are in the same vector.

16. (Amended) Vector material as claimed in [any one of the preceding claims] Claim 1 for use in antitumour therapy [characterized in that the], said use [comprises] comprising the introduction of the vector material into tumour cells.

18. (Amended) Vector material as claimed in Claim 17 [further characterised in that] wherein at least one element of the control gene expression regulatory system is selected so that the control gene is automatically upregulated to

an effective operational level when the vector material is introduced into cells of said tumours.

20. (Amended) Vector material as claimed in [any one of Claims] Claim 17 [to 19] wherein said control gene expression regulatory system responds in use in a transfected cell to said expression inducing influence where the latter is provided by a change in environmental thermal conditions in cells containing the vector material.

21. (Amended) Vector material as claimed in [any one of Claims] Claim 17 [to 19] wherein said control gene expression regulatory system responds in use in a transfected cell to said expression inducing influence where the latter is provided by a change in local oxygen concentration.

22. (Amended) Vector material as claimed in [any one of Claims] Claim 16 [to 19] wherein said control gene expression regulatory system includes an expression control element responsive in use in a transfected cell to a hypoxia condition in the cellular environment.

25. (Amended) Vector material as claimed in Claim 23 [or 24] wherein said control gene expression regulatory system responds in use in a transfected cell to said expression inducing agent which is provided by at least one of the following:

electromagnetic radiation, application of heat or cooling, application of a magnetic or electric field, an exogenous chemical inducing agent, radiation in the form of sub-atomic particles.

32. (Amended) Vector material as claimed in Claim 20 wherein the antitumour drug is selected from the [following] group consisting of:

Temozolomide, Dacarbazine, Streptoxotocin, Procarbazine, Carmustine, Semustine, Lomustine, Fotemustine, Busulphan, Treosulphane, Mechlorethamine, Cyclophosphamide, lphosphamide, Chlorambucil, Melphalan, ethyleneimines, triethylene melamine, hexamethylmelamine, TEPA and thio-TEPA, dibromomannital and dibromodulcitol, hydroxyurea, Methotrexate, azaserine Azathioprin, 5-azacytidine, 5-fluorouracil, cytosine arabinoside, 6-mercaptopurine, Allopurinol 6-thioguanine, deoxycoformycin, Tiazofurin, Acivicin, Pyrazofurin and p-aminolaevulinic acid, plant alkaloids such as Vinblastine, Vincristine and Vindesine, Etoposide and Teniposide, antitumour antibiotics such as Doxorubicin, Daunorubicin, Actinomycin, Bleomycins, Mytomycin, Mythramycin, Mitozantrone hormones such as oestrogen and progesterone.

33. (Amended) Vector material as claimed in Claim 23 [or 24] wherein said expression inducing agent is an exogenous chemical inducing agent in the form of a hormone that interacts with a receptor molecule which interacts with a complementary hormone responsive element in the control gene expression regulatory system.

34. (Amended) Vector material as claimed in Claim 23 [or 24] wherein the control gene expression regulatory system comprises a gene upregulation system that can be activated by a chemical agent.

35. (Amended) Vector material as claimed in Claim 22 [or 23] containing a number of different control gene expression regulatory elements responsive to different expression inducing influences so as to be activated under a range of different conditions.

36. (Amended) Vector material as claimed in [any of the preceding claims] Claim 1 wherein at least one element of the sensitizing gene expression regulatory system is inducible in response to the effect of a predetermined exogenous or endogenous expression inducing influence.

38. (Amended) Vector material as claimed in [any of the preceding claims] Claim 1 wherein at least one element of the sensitizing gene expression regulatory system is selected for efficiency in the particular tumour(s) to which said antitumour therapy is directed, the selection being carried out using gene array technology.

39. (Amended) Vector material as claimed in [any of the preceding claims] Claim 1 which includes a plurality of tumour sensitizing genes providing a range of different expression products.

41. (Amended) A pharmaceutical composition comprising vector material as claimed in [any of the preceding claims] Claim 1 in association with a pharmaceutically acceptable carrier or excipient.

43. (Amended) A kit comprising one or more unit doses of vector material as defined in [any one of Claims] Claim 1 [to 40] together with a transfection agent.

44. (Amended) A kit comprising:

- (d) a vector which comprises a tumour cell sensitizing gene or genes and a sensitizing gene expression regulatory system as defined in [any one of the Claims] Claim 1 [to 40];
- (e) a vector which comprises a control gene and a control gene expression regulatory system as defined in [any one of Claims] Claim 1 [to 40]; and
- (f) instructions for the use of vectors (a) and (b) in antitumour therapy.

45. (Amended) A kit comprising:

- (c) vector material as defined in [any one of Claims] Claim 1 [to 40];
- (d) a vector which comprises a tumour cell sensitizing gene or genes and a sensitizing gene expression regulatory system as defined in [any one of Claims] Claim 1 [to 40].

47. (Amended) A kit as claimed in Claim 43[, 44, 45 or 46] wherein each of the vectors and/or vector material is provided in the form of a pharmaceutical composition in association with a pharmaceutically acceptable carrier or excipient.

48. (Amended) A kit as claimed in [any one of Claims] Claim 43 [to 47] wherein the sensitizing gene(s) produce(s) a prodrug activating agent and [wherein one or more doses] said kit also includes at least one dose of a prodrug matched to said prodrug activating agent [are also included in said kit].

49. (Amended) A method of treatment for cancer patients wherein there is delivered to tumour cells vector material as claimed in [any of Claims] Claim 1 [to 40], said cells then being subjected to the appropriate expression inducing influence.